REMARKS

The application has been amended to remove reference numbers from the claims as per the Examiner's objection.

Applicant submits that the current office action contains clear errors in the Examiner's rejections as well as omissions of one or more essential elements needed for a prima facie rejection.

The Examiner has rejected claims 1-12 under 35 USC 103(a) as being unpatentable over U.S. Pat. No. 6,421,527 to DeMartin in view of U.S. Pat. No. 6,732,321 to Classon. It is applicant's belief that the Examiner has mischaracterized the teachings of both DeMartin and Classon as applied to the present application.

Both DeMartin and the present application operate in the context of an adaptive multi-rate (AMR) speech coding system such as the GSM AMR standard. AMR essentially works by adding control data to a speech frame at the expense of speech data when channel conditions are not as optimal while allowing for more speech data in a frame when channel conditions are very good. Each speech frame is finite in length so if control data is added then speech data must be subtracted from a frame and vice versa. The concept of AMR is that these tradeoffs can be made when appropriate. The key is in knowing when to make the tradeoff and how much to tradeoff. AMR defines discrete coding rates referred to as codec modes that define how much speech data the speech frame will require.

The default position in the AMR specification provides that the basestation sets and manages the codec modes for the communication link based on channel condition information it receives from the mobile station. Thus, the basestation instructs the mobile station which codec mode to use in both downlink and uplink communications. If the mobile station detects changing channel conditions with the communication link which could be either deteriorating or improving channel conditions, it will inform the basestation in the next communication and the basestation will process the data to determine if a codec mode switch is warranted.

The broad goal for DeMartin and the present invention is to efficiently determine and set the best possible codec mode for the mobile

station/basestation communication link under the current channel conditions. The approaches articulated by DeMartin and the present invention, however, are quite different and patentably distinct. DeMartin stays within the general confines of the AMR specification by keeping all codec mode decisions in the basestation only. DeMartin has presumably devised a system/method of making better decisions regarding codec mode switches. It is also very important to note that the codec mode decisions in DeMartin do not affect current speech frames only future speech frames. This is in stark contrast to the present invention which places the responsibility of codec mode switching in the receiving device. The receiving device can be either the mobile station or the basestation. Moreover, the receiving device has the ability to switch the codec mode for the currently received speech frame.

Referring specifically to the claims of the present application, DeMartin does not disclose "*decoding the inband bit portion of a received frame to obtain confidence levels associated with each of the M codec modes*" as the Examiner has asserted by citing col. 2, lns. 38-47 and col. 4, lns. 32-48 of DeMartin. Col. 2, lns. 38-47 merely describe header information in the speech frame that informs the decoder which codec mode to use when decoding the speech portion of the frame. Col. 4, lns. 32-48 describe the basestation (only) evaluating a separate metric to help determine and assign a confidence level for the carrier-to-interference (C/I) ratio indicative of channel quality conditions. The confidence level indicator is binary in that it yields a 0 or a 1. A "0" value will cause a codec mode switch <u>for the next speech frame</u> to a codec with greater error protection (and less speech data) in the frame while a "1" value will cause a codec mode switch <u>for the next speech frame</u> to a codec with less error protection (and more speech data). It should be noted that DeMartin does not determine a confidence level for each of the M codec modes as claimed in the present application but rather only determines a confidence level for the current codec mode. Thus, DeMartin does not read on the recited claim step/element.

Further, DeMartin also does not disclose "*choosing the most likely codec mode based on the highest confidence level to channel decode the speech portion*" for two reasons. First, DeMartin has not determined confidence levels

for all M codec modes just the current codec mode. Second, DeMartin does not choose the most likely codec mode just the next closest codec mode to the current codec mode. The most likely codec mode is not necessarily the next one sequentially on the list.

Neither does DeMartin teach "*performing a frame determination check to determine the quality of the decoded speech frame*". The portion cited by the Examiner (col. 4, ln. 56 to col. 5, ln. 13) describes the calculations performed on DeMartin's separate metric to help determine and assign a confidence level for the carrier-to-interference (C/I) ratio indicative of channel quality conditions. A frame determination check is something else entirely that involves a cyclic redundancy check (CRC) sometimes in conjunction with other techniques such as a bit error rate (BER) determination. A frame determination check checks the integrity of the actual frame data while the cited portion of DeMartin is a calculated value used to determine the codec mode to use for the next frame based.

The Examiner admits that DeMartin does not perform the step/element of "if the decoded speech frame is determined to be of poor quality, then choosing the next most likely codec mode corresponding to the next highest inband bit decoding confidence level and repeating steps (c) through (e)". For this he relies on the secondary reference of Classon at col. 8, lns. 22-43. This portion of Classon is directed toward accurately decoding a frame to determine which coding rate to use to decode the rest of the speech frame. In other words, Classon is trying to ensure that the decoder will use the intended codec mode rather than switch codec modes based on changing channel conditions. Classon assumes that failed decoding is the result of the failure to use the intended codec mode and provides a mechanism for randomly switching codec modes until the right one is found or a timeout occurs. Thus, Classon does not base a codec mode switch on a previously determined inband bit decoding confidence level as claimed in the present application. The present application assumes that the codec mode was properly extracted and used, just that it should be changed based on current conditions. This is completely different than what is described in Classon.

Regarding claims 2 and 8 the Examiner has previously admitted that DeMartin does not disclose a repetition step with respect to claims 1 and 7 and now changes his position to state that DeMartin does disclose a repetition step. This is inconsistent on the part of the Examiner. The cited portion of DeMartin (col. 4, ln. 49 to col. 5 ln. 13) does not apply to repetitive attempts at decoding the **same** speech frame. Any mode switches performed by DeMartin will not take effect until the next speech frame since only the basestation can cause a codec mode switch.

Thus, applicant requests reconsideration and withdrawal of the 35 USC 13(a) rejection of claims 1 and 7 and the claims that depend therefrom.

Regarding claims 6 and 12, DeMartin does not calculate an in-band metric for **each** codec mode, just the current one. Nor does DeMartin partially decode the **speech** data for **each** codec mode. Col. 2, lns. 38-47 as the Examiner has stated, decodes the header only so as to determine which coding rate to use to decode the rest of the frame. DeMartin does not describe partially decoding the **speech** data which is separate from the header data. Since DeMartin fails to perform the first two steps/elements of the claims it cannot then use information determined from those steps to determine the most likely codec mode to use based on current channel conditions. Thus, DeMartin fails to disclose each and every element of the claims in question.

Thus, applicant requests reconsideration and withdrawal of the 35 USC 13(a) rejection of claims 6 and 12.

Moreover, as a 35 USC 103(a) rejection, there is no mention of a secondary reference nor is there a statement of why the DeMartin reference does not anticipate the present invention under 35 USC 102(b). Exactly how is DeMartin being applied to claims 6 and 12 of the present application.

It is applicant's belief that the 35 USC 103(a) rejection is deficient on its face pursuant to § 706.02(j) of the MPEP because the Examiner failed to demonstrate that each and every step and/or element of the claims in the present application is disclosed in the cited prior art. Reconsideration and withdrawal of the 35 USC 13(a) rejection of claims 1-12 is requested.

The Examiner is authorized to charge any fees required and not paid herein, or credit any overpayment to Deposit Account 13-4365.

Respectfully submitted,

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